

INPUT/OUTPUT CONTROLLER NODE IN AN ADAPTABLE COMPUTING ENVIRONMENT

ABSTRACT OF THE DISCLOSURE

A reconfigurable input/output controller (IOC) allows an adaptive computing engine (ACE) to communicate with external devices. The external devices can comprise a separate system on chip (SOC) or can be other devices or resources such as audio/visual output devices, memory, network or other communications, etc. The IOC allows different modes of transfer and performs necessary translation of input and output commands. In one embodiment, the IOC adheres to standard messaging and communication protocol used by other nodes in the ACE. This approach allows a uniform approach to the ACE design and provides advantages in scalability and adaptability of the ACE system. One feature of the invention provides a physical link adapter for accommodating different external communication types such as, RS231, optical, Firewire, universal synchronous bus (USB), etc. The physical link adapter uses a reconfigurable finite state machine, selectable couplings and a bus switch to allow connection of different communication types' signals to a common ACE component such as to an IOC.